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(71) Applicant (*for all designated States except US*): **BASELL
POLYOLEFINE GMBH** [DE/DE]; Brühler Strasse 60,
50389 Wesseling (DE).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BAITA, Pietro**
[IT/IT]; Via delle Rose 13, I-45030 S.M. Maddalena,
Occhiobello (IT). **COVEZZI, Massimo** [IT/IT]; Via
Renata di Francia 40, I-44100 Ferrara (IT). **MEI, Gabriele**
[IT/IT]; Viale Cavour 144, I-44100 Ferrara (IT). **MORINI,**
Giampiero [IT/IT]; Via Giotto 36, I-35100 Padova (IT).
PATER, Joachim, T., M. [NL/IT]; Via Vene di Bellocchio
10, I-44100 Ferrara (IT).

(74) Agent: **GIBERTI, Stefano**; Basell Poliolefine Italia
S.p.A., Intellectual Property, P.le G. Donegani, 12, I-44100
Ferrara (IT).

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(54) Title: PROCESS FOR THE (CO)POLYMERIZATION OF ETHYLENE

(57) Abstract: A process for preparing a broad molecular weight polyethylene carried out in the presence of a catalyst system comprising (i) a solid catalyst component comprising Mg, Ti, halogen, and optionally an internal electron donor compound, and (ii) an Al-alkyl cocatalyst said process comprising at least two step of polymerization (a) and (b), in which, - in a first step (a) ethylene is polymerized in the presence of a molecular weight regulator in order to produce a ethylene (co)polymer, and in a further step (b), which is carried out in the presence of an external electron donor compound added to this polymerization step as a fresh reactant, ethylene is copolymerized with an alpha olefin of formula CH₂=CHR, in which R is a C₁-C₂₀ hydrocarbon group, to produce an ethylene copolymer having a molecular weight higher than that of the copolymer produced in step (b).



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